

**What is claimed is:**

1. A network system integrated with SIP call server and SIP agent client, the network apparatus being Session Initiation Protocol (SIP) structure, the  
5 network system being provided between a local device and a network for connecting with at least one remote SIP agent client, the network system comprising:

at least one local connecting port for coupling with the local device;

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a remote connecting port for coupling with the network; and

an SIP processing module electrically connected with the local connecting port and remote connecting port, the SIP processing module  
15 including:

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a local SIP agent client for executing at least one SIP agent client program to convert an analog voice signal of the local device into a digital signal and send the digital signal to the remote SIP agent client or convert  
20 the digital signal sent from the remote SIP agent client into an analog voice signal and then send the voice signal to the local device; and

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an SIP call server for executing at least one SIP call server program, whereby after the local SIP agent client and the remote SIP agent client perform SIP registry and the locations of the local SIP agent client and the remote SIP agent client are linked, the local SIP agent client and the remote SIP agent client can bidirectionally telecommunicate with each other by voice.

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2. The network system as claimed in claim 1, wherein the network system is an ADSL modem, a cable modem, a wireless LAN access point, a network hub or an IP sharer.
- 5 3. The network system as claimed in claim 1, wherein the local device is a computer mainframe, a network hub, an IP phone or a PSTN gateway.
4. The network system as claimed in claim 3, wherein the PSTN gateway is connected with at least one telephone, facsimile or PBX.
- 10 5. The network system as claimed in claim 1, wherein the network is an LAN or Internet.
6. The network system as claimed in claim 1, wherein the remote device is a  
15 computer, a network hub, an IP phone, a PSTN gateway or a VoIP gateway.
7. The network system as claimed in claim 6, wherein the PSTN gateway is connected with at least one telephone, facsimile or PBX.
- 20 8. The network system as claimed in claim 6, wherein the VoIP gateway is connected with at least one VoIP phone.
9. The network system as claimed in claim 1, wherein the SIP processing module via the local connecting port controls the transmission of the data  
25 packet between the network system and the local device.
10. The network system as claimed in claim 1, wherein the SIP processing module via the remote connecting port controls the transmission of the data

packet between the network system and the network.

11. The network system as claimed in claim 1, wherein the hardware structure of the SIP processing module includes:

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a microprocessor unit for executing the SIP call server program and SIP agent client program;

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a memory unit electrically connected with the microprocessor unit for storing the SIP call server and agent client program to be executed, the transmitted data and the SIP URI of every client; and

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a plurality of transmission units used to bridge the local connecting port or the remote connecting port and the microprocessor unit for transmitting the data packet.

12. The network system as claimed in claim 11, wherein the memory unit is an ROM, a DRAM or a flash Memory.

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13. The network system as claimed in claim 11, wherein the transmission unit is a broad band modem interface, an Ethernet interface or a wireless LAN interface.

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14. The network system as claimed in claim 1, wherein the SIP call server program is proxy server program, registry server program, location server program, redirect server program or voice mail server program.

15. The network system as claimed in claim 1, further comprising:

at least one IP phone connecting port for coupling with at least one IP phone; and

5 a voice processing module electrically connected with the IP phone connecting port and the SIP processing module, the voice processing module serving to convert the voice signal of the IP phone into digital signal and convert the digital signal of the SIP processing module into voice signal, whereby by means of the IP phone, a user can directly telecommunicate with the remote SIP agent client by voice.

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16. The network system as claimed in claim 15, further comprising:

15 a compressing/decompressing processor electrically connected to the IP phone connecting port for compressing/decompressing the voice signal; and

20 a digital signal processor electrically connected to the compressing/decompressing processor and the SIP processing module for converting the voice signal into digital signal or converting the digital signal into voice signal.